PACIO ADI
CMS FHIR Connectathon 3
July 19-21, 2022
Welcome & Intro
Track Leads

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Agenda

• PACIO Background Information
• Connectathon / Track Overview
• Technical Overview
• Use Case
• Next Steps
BACKGROUND INFORMATION
PACIO Project: Background

Established February 2019, the PACIO Project is a collaborative effort between industry, government and other stakeholders, with the goal of establishing a framework for the development FHIR implementation guides to facilitate health information exchange.

http://pacioproject.org
PACIO Project: 
Advance Directive Interoperability

Problem Statement:

This Advance Directive Interoperability (ADI) FHIR implementation guide (IG) is used for explaining how to represent, exchange, and verify a person’s goals, preferences, and priorities for treatments and interventions regarding future medical care if the patient is unable to communicate.
CONNECTATHON / TRACK OVERVIEW
How Is This Connectathon Different?

- Testing Demonstrations are concentrated into 3 x 20 min sessions on July 20
- Test partners will be arranged in advance
- Test scenarios will be agreed in advance
- Testing will be conducted in advance and demonstrated on the day
# CMS Connectathon 3 - 2022

<table>
<thead>
<tr>
<th>Date (2022)</th>
<th>Event</th>
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<tbody>
<tr>
<td>6/2 - 7/13 – 2-3pm ET</td>
<td>Weekly Tech Team (Connectathon preparation &amp; testing)</td>
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<tr>
<td>6/16 – 2-3pm ET</td>
<td>Implementer Connections Call</td>
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<tr>
<td>7/19-7/21</td>
<td>CMS Connectathon</td>
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<tr>
<td>7/20 – 8-5 ET</td>
<td>Track testing/demonstration (AM session)</td>
</tr>
<tr>
<td>7/21 – 9:30-4 ET</td>
<td>Track Highlights (ADI 2:40PM ET)</td>
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Connectathon Page: [https://confluence.hl7.org/display/FHIR/CMS+2022+-+07+FHIR+Connectathon+3](https://confluence.hl7.org/display/FHIR/CMS+2022+-+07+FHIR+Connectathon+3)

<table>
<thead>
<tr>
<th>Time</th>
<th>Session Title</th>
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<tbody>
<tr>
<td>9:00 AM</td>
<td>Welcome from the CMS Administrator</td>
</tr>
<tr>
<td>9:10 AM</td>
<td>Centers for Medicare &amp; Medicaid Services Update</td>
</tr>
<tr>
<td>9:50 AM</td>
<td>Office of the National Coordinator for Health IT (ONC) Update</td>
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<tr>
<td>10:40 AM</td>
<td>HL7 Implementation Division</td>
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<tr>
<td>11:10 AM</td>
<td>CMS Support of FHIR For Healthcare Directories</td>
</tr>
<tr>
<td>11:30 AM</td>
<td>FHIR Advancements for Prior Authorization</td>
</tr>
<tr>
<td>1:00 PM</td>
<td>Afternoon Kickoff with the Deputy CIO</td>
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<tr>
<td>1:30 PM</td>
<td>Opening the Digital Front Door</td>
</tr>
<tr>
<td>2:15 PM</td>
<td>Preparing for the No Surprises Act</td>
</tr>
<tr>
<td>3:00 PM</td>
<td>Delivering Health Equity</td>
</tr>
<tr>
<td>3:30 PM</td>
<td>CMS Electronic Clinical Quality Measures</td>
</tr>
<tr>
<td>4:00 PM</td>
<td>FHIR Connectathon Testing Kick Off and Closing Announcements</td>
</tr>
</tbody>
</table>
Track Schedules - 7/20/2022

**AM Tracks**
- CARIN BB
- Burden Reduction
- Cdex
- Gravity
- PACIO
- Nat’l Directory US Realm / Pdex Plan Net
- Risk Adjustment

**PM Tracks**
- CMS Blue Button
- Clinical Quality
- Patient Cost Transparency
- Pdex / Formulary(combined)
- FAST Infrastructure
- Member Attribution
Track Demo/Testing - 7/20/2022

- **Session 1: 30 – 60 minutes: Scenario / Test Overview**
  - Focus on showing observers at a high level what they are about to see from your scheduled testers
  - Point developers to testing resources (RI, test scripts)

- **Session 2: 3 20-minute sessions**
  - Prepare in advance 3 sets of peer to peer testers to test against each other, test tools, or both

- **Session 3: 30 minutes: Tester wrap up**
  - Who was successful
  - What needs addressed (by the IG / by the participant)
  - Plan what they will demo at the Track Highlight

- **Session 4: 60 minutes: Office Hours for participants with questions or who are interested in onboarding to the test tools**
### Track highlights - 7/21/2022

<table>
<thead>
<tr>
<th>START</th>
<th>END</th>
<th>Description</th>
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<tbody>
<tr>
<td>9:30</td>
<td>9:40</td>
<td>Da Vinci Burden Reduction</td>
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<tr>
<td>9:40</td>
<td>10:00</td>
<td>Da Vinci Clinical Documentation Exchange (CDex)</td>
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<tr>
<td>10:00</td>
<td>10:20</td>
<td>Da Vinci Member Attribution Track</td>
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<tr>
<td>10:40</td>
<td>11:00</td>
<td>Da Vinci Patient Cost Transparency</td>
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<tr>
<td>11:00</td>
<td>11:20</td>
<td>Da Vinci Payer Data Exchange (PDex STU2 inc. Payer-to-Payer)</td>
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<tr>
<td>11:20</td>
<td>11:40</td>
<td>Da Vinci Payer Data Exchange Formulary and Plan-Net</td>
</tr>
<tr>
<td>11:40</td>
<td>12:00</td>
<td>Da Vinci Risk Adjustment</td>
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<tr>
<td>12:00</td>
<td>1:00</td>
<td>LUNCH BREAK</td>
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<td>1:00</td>
<td>2:00</td>
<td>FHIR at Scale Taskforce FAST</td>
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<td>2:00</td>
<td>2:20</td>
<td>Blue Button</td>
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<tr>
<td>2:20</td>
<td>2:40</td>
<td>Gravity SDOH Exchange</td>
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<td>2:40</td>
<td>3:00</td>
<td><strong>PACIO Advance Directive Interoperability</strong></td>
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<tr>
<td>3:00</td>
<td>3:30</td>
<td>Clinical Quality Improvement</td>
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<tr>
<td>3:00 PM</td>
<td>4:00 PM</td>
<td>Connectathon Wrap Up / Final Session</td>
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*Subject to change*
TECHNICAL OVERVIEW
Focus Areas

- STU 1 – Person Authored Data
- STU 2 – Portable Medical Orders
  - Scanned Document
  - CDA Document

Advance Directive Interoperability (ADI)
FHIR IG Use Case Overview

<table>
<thead>
<tr>
<th>Use Cases</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use Case 1: Create in digital form [Content]</td>
<td>Advance Directive Information (person-authored information)</td>
</tr>
<tr>
<td>Use Case 2: Share [Content]</td>
<td>Encounter-Centric Patient Instruction (practice-authored information)</td>
</tr>
<tr>
<td>Use Case 3: Query and access [Content]</td>
<td>Portable Medical Order for Life-Sustaining Treatments (practice-authored information)</td>
</tr>
<tr>
<td>Use Case 4: Update [Content]</td>
<td>Type I</td>
</tr>
<tr>
<td>Use Case 5: Verify current version of AD [Content]</td>
<td>Type II</td>
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</tbody>
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Tasks

• Define scenarios & system roles
• Update Confluence track information
• Identify participants
• IG development
  • Updated profiles
  • Examples
• Prepare reference implementation
• Participant generated sample data
• Participant testing
Areas to address

• CarePlan.addresses Conditions
  • Don’t want hypothetical problems showing up in the patient problem list
  • Future problems (not a current patient problem, but a hypothetical) should populate text in CarePlan.addresses.display

• HCA Consent Accept
  • Not defined in the IG, should not be sent in the data
New Areas

• Communication of Portable Medical Order (PMO)
  • Need to make sure the document type is available
• Adding the existence of the PMO in the PACP
Scene 0: Background

0 A. Betsy created her paper “Texas Living Will” form (LOINC 86533-7) around her 65th birthday. In it, she designated her son Charles as her Primary Health Care Agent (HCA) and her daughter Debra Johnson as her First Alternate HCA. She uploaded a scanned, digital copy of her paper document into a consumer-facing application (APP) capable of electronic sharing.

0 B. Several years later, Betsy used an APP to create a structured digital personal advance care plan document (PACP) (LOINC 81334-5) that contained broader, more personalized information about her goals, preferences, and priorities (GPP) for care should she need healthcare services in the future but be unable to communicate those wishes herself. Betsy talked with her son Charles and shared with him both the PACP and LW documents through an APP.
That summer, Betsy visited Charles in Michigan and shared her Texas LW and her PACP with the state of Michigan’s Health Information Exchange (HIE). Charles recommended this to ensure a state so far from her home state of Texas would have her information available for access by providers should she need medical care while in Michigan with him. Betsy extends her visit with her son Charles in Michigan to the end of the year, due to declines in her health condition and status and her desire to remain near family for their support.

<table>
<thead>
<tr>
<th>Scene</th>
<th>Events</th>
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</thead>
</table>
| 0 A (Background) | • Create Texas Living Will (paper)  
                        • Scan/share Texas Living Will with AD document repository |
| 0 B (Background) | • Create PACP (structured data)  
                        • Share PACP with son via AD document repository |
| 0 C (Background) | • Share Texas Living Will and PACP with Michigan HIE (access from AD document repository) |
Scene 0: Background

**USE CASE**

- **Betsy (Patient)**
- **Texas POA + LW (scanned paper)**
- **PACP (structured/digital)**
- **EHRs: Hospital, HHA**
- **Visiting State HIE (Michigan)**

**SYSTEMS**

- **Client (MyDirectives)**
- **HIE Server (Michigan)**
- **FHIR Server (AD Document Repository)**
- **EHR Client**
- **Consumer Client**

*Betsy designates a HCA, documents her GIP and shares giving providers access*
Scene 1: Michigan POA + LW Form
(scanned document)

1 A: Betsy decides to change her First Alternate HCA after reflecting on recent family events and interactions. She creates a new Michigan form (POA+LW) and designates her son Charles designated as her Primary HCA. She then designates his wife Lisa as her First Alternate HCA and her daughter Debra Johnson as her Second Alternate HCA.

1 B: The new paper document is signed, witnessed, scanned, and uploaded into a consumer facing application (APP), stored in an advance directive document repository.

1 C: The digital document is sent to the state of Michigan’s HIE.

1 D: Betsy's family is able to retrieve the digital copy of the Michigan POA + LW document

<table>
<thead>
<tr>
<th>Scene</th>
<th>Events</th>
<th>Possible Implementers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 A</td>
<td>• Create Michigan POA and Living Will (paper)</td>
<td>• MyDirectives</td>
</tr>
</tbody>
</table>
| 1 B   | • Client scans/share Michigan POA and Living Will with AD document repository | • MyDirectives  
• ADVault |
| 1 C   | • AD document repository sends Michigan POA and Living Will to Michigan HIE | • ADVault  
• Michigan HIE Server (Interoperability Institute/MiHIN?, MITRE?) |
| 1 D   | • Family members can retrieve a copy of the Michigan POA and Living Will document | • AD Vault  
• Michigan HIE Server (Interoperability Institute/MiHIN?, MITRE?)  
• Patient Centric Solutions?, Others? |
Scene 1: Updating POA + LW (scanned document)

- Charles (Son)
- Betsy (Patient)
- POA + LW: Creates new Michigan document
- Shares with family and Michigan HIE
- Michigan HIE
- ADI Custodian
- ADI Registry Repository Server
- ADI Receiver
- Michigan HIE (Interoperability Institute)
- FHIR Server (ADVault and others)
- Consumer Client (Patient Centric Solutions, MaxMD, and others)
- Client (MyDirectives)
- ADI Creator
- ADI Receiver
Scene 2: Creating a Portable Medical Order & Updating PACP

2 A: Betsy’s health continues to decline while in Michigan, so she establishes care with a new Michigan based PCP. She feels as though she will permanently remain in Michigan with her family. Her new PCP reviews the existing Michigan LW+POA and PACP Betsy shares with her and in view of her declining health status recommends a portable medical order be created that would align with Betsy’s other advance healthcare decision documents.

2 B: On 12/20/21, the PCP creates the portable medical order (scanned document) with Betsy, and they discuss changes Betsy should make to her PACP (structured document) and Michigan POA+LW so that they align in terms of goals of care and treatment preferences. The portable medical order is scanned into a clinician facing application that connects to the Advance Directive document repository. From there, a copy is exchanged with the Michigan HIE.

2 C: Betsy updates her PACP and reviews her Michigan Advance Directive (POA+LW) at home to ensure they are consistent with regards to her decisions and priorities for care.
**Scene 2: Creating a Portable Medical Order & Updating PACP**

<table>
<thead>
<tr>
<th>Scene</th>
<th>Events</th>
<th>Possible Implementers</th>
</tr>
</thead>
</table>
| 2 A   | • PCP reviews the existing Michigan LW+POA and PACP | • MyDirectives for Clinicians  
• AD Vault  
• Michigan HIE Server  
(Interoperability Institute/MiHIN?, MITRE?) |
| 2 B   | • PCP creates Portable Medical Order with Betsy and scans it into a clinician facing app which sends it to a Advance Directive document repository (FHIR server)  
• Copy of Portable Medical Order sent to Michigan HIE for broader access | • MyDirectives for Clinicians  
• AD Vault  
• Michigan HIE Server  
(Interoperability Institute/MiHIN?, MITRE?) |
| 2 C   | • Betsy updates her PACP and reviews her Michigan Power of Attorney + Living Will document | • AD Vault  
• My Directives for Patients  
• Patient Centric Solutions?  
• Others |
Scene 2: Creating a Portable Medical Order & Updating PACP
### Scene 3: Retrieval of Advance Directive Information

#### 3 A: On 12/21/21, Betsy ensured appropriate access was authorized (shared) to allow her PCP, designated HCAs, and the Michigan HIE to access her three advance care documents: Michigan POA+LW (scanned), PACP (structured), and portable medical order (scanned).

#### 3 B: Betsy received care from a home health agency (HHA) and the nurse retrieved from the Michigan HIE on 1/16/22 all three documents to help inform Betsy’s plan of care. The nurse verified the observation indicating the presence of a portable medical order is visible in the HHA’s EHR due to their integration with the Michigan HIE.

#### 3 C: Betsy and her designated HCAs confirmed access to her updated advance care documents.

<table>
<thead>
<tr>
<th>Scene</th>
<th>Events</th>
<th>Possible Implementers</th>
</tr>
</thead>
</table>
| 3 A   | • Betsy allows access to her PACP, Michigan Power of Attorney + Living Will, and Portable Medical Order by her PCP, designated HCAs, and the Michigan HIE | • Patient Centric Solutions?  
• AD Vault  
• Michigan HIE Server (Interoperability Institute/MiHIN?, MITRE?) |
| 3 B   | • Home Health RN accesses Betsy's PACP, Michigan Power of Attorney + Living Will, and Portable Medical Order | • Max MD? |
| 3 C   | • Betsy and her designated HCAs confirmed access to her updated advance care documents | • Patient Centric Solutions? |
Scene 3: Retrieval of Advance Directive Information

HHA Nurse Case Manager

Betsy (Patient)

Charles (Son)

HHA EHR
Queries documents POA/LW PAC
Portable Medical Orders

APP

HHA Client
(Patient Centric Solutions, MaxMD, and others)

Consumer Client
(MyDirectives, Patient Centric Solutions, MaxMD, and others)

Clinical Client
(MyDirectives for Clinicians)

Consumer Client
(MyDirectives?, Patient Centric Solutions, Others?)

HHA Client
(Patient Centric Solutions?)

Michigan HIE

FHIR Server
(AD Vault and others)

Michigan HIE

ADI Creator

ADI Retriever

ADI Receiver

ADI Creator

ADI Retriever

ADI Receiver

ADI Creator

ADI Retriever

ADI Receiver

ADI Collector

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<tbody>
<tr>
<td>Texas Living Will</td>
<td>Scanned paper</td>
<td>86533-7</td>
<td>0 A: created</td>
<td>0 A: AD document repository</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0 B: shared</td>
<td>0 B: Son (Charles) via AD document repository</td>
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<td></td>
<td></td>
<td>0 C: Michi</td>
<td>0 C: Michigan HIE via AD document repository</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>gan HIE</td>
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</tr>
<tr>
<td>Personal Advance Care Plan (PACP)</td>
<td>Structured (digital)</td>
<td>81334-5</td>
<td>0 B: created</td>
<td>2 A: Retrieved by Michigan PCP via Michigan HIE or AD document repository</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0 C: shared</td>
<td>2 C: AD document repository</td>
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<tr>
<td></td>
<td></td>
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<td>2 A: shared</td>
<td>3 A: Michigan HIE via AD document repository. Michigan PCP and HCAs via AD</td>
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<tr>
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<td></td>
<td>2 C: updated</td>
<td>document repository or Michigan HIE.</td>
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<td>3 A: shared</td>
<td>3 B: Home Health Nurse via Michigan HIE</td>
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<tr>
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<td></td>
<td>3 B: retrieved</td>
<td>3 C: Betsy and her HCAs (family) via AD document repository</td>
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<td>3 C: retrieved</td>
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## Document Type Overview - continued

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<tbody>
<tr>
<td>Michigan Living Will &amp; Power of Attorney (LW+POA)</td>
<td>Scanned paper</td>
<td>92664-2</td>
<td>1 A/B: created</td>
<td>1 A/B: AD document repository</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 C: shared</td>
<td>1 C: Michigan HIE via AD document repository</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 D: shared</td>
<td>1 D: Consumer app (family) via AD document repository</td>
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<tr>
<td></td>
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<td>2 C: reviewed (no changes)</td>
<td>2 C: Consumer app (medical) via AD document repository</td>
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<tr>
<td></td>
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<td>3 A: shared</td>
<td>3 A: Michigan HIE via AD document repository. Michigan PCP and HCAs via AD document repository or Michigan HIE.</td>
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<tr>
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<td></td>
<td></td>
<td>3 B: retrieved</td>
<td>3 B: Home Health Nurse via Michigan HIE</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>3 C: retrieved</td>
<td>3 C: Betsy and her HCAs (family) via AD document repository</td>
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<tr>
<td>Portable Medical Order (Michigan)</td>
<td>Scanned paper</td>
<td>93037-0</td>
<td>2 B: created</td>
<td>2 B: AD document repository</td>
</tr>
<tr>
<td></td>
<td></td>
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<td>3 A: shared</td>
<td>3 A: Michigan HIE via AD document repository. Michigan PCP and HCAs via AD document repository or Michigan HIE.</td>
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NEXT STEPS
Next Step Thoughts